

PRESENTATION FRETWORK DESIGN WITH THIS NUMBER.

Hobbies

• A Weekly Journal.

For Amateurs of Both Sexes.

No. 24. VOL. I.

MARCH 28, 1896.

ONE PENNY.

SWING LETTER HOLDER.



DESIGN, No. 24.

Painting on Satin.
Bent Iron Work Bookshelves.

Stamp Collecting.
Photographic Notes & Hints.

China Painting.
Weekly Presentation Design.

Bee-Keeping.
Buying a Bicycle.

Photographic Enlargements.
Prize Competitions.

Cycling and Athletic Notes.
Pigeons, Etc.



STAMPS Week by Week.

A Philatelic Causerie by PERCY C. BISHOP,

Joint Editor of the "STAMP COLLECTORS' FORTNIGHTLY"; Ex-Editor of "THE PHILATELIC JOURNAL" and "PHILATELIC REVIEW OF REVIEWS"; General Secretary of the LONDON PHILATELIC CLUB.



HE stamps of the Indian Native States have always been a source of great perplexity to the young Philatelist. Apart from the initial difficulty of sorting out the stamps into the various States to which they belong—no easy job, the inscriptions being all in native characters—there must always be a suspicion in the minds of the less experienced collectors as to the genuineness of these masterpieces of crude designing and worse printing. The stamp shown in the annexed engraving has puzzled more than one *Hobbies* reader. It belongs to Nowanugger, and was issued in 1893. Because of the difficulties surrounding these and other native Indian issues, it is a distinct pleasure to be able to announce that we shall have very few more of them. Cashmere, for one, has already ceased to exist as a stamp-issuing State, and in course of time Bamra, Bhopal, Bhore, Chamba, Faridkot, Jhind, Jhalawar, Hyderabad, and all the others will be deprived of their home-made stamps and supplied with the stamps of British India.



—:o:—

Some more Luxembourg stamps are to be thrown on the market shortly. The Minister of Finance of this not very "Grand" Duchy has declared that the stamps which have accumulated on Parcels Post and Money Order cards since 1880 will be removed and sold to whosoever will buy them, for the benefit of the Pension Fund of the Duchy. I learn that the stamps in question are all of the values of 25 centimes and upwards, and the face value of the lot is a matter of 30,000 francs, or in English money, £1,200. Probably some dealer, or syndicate of dealers, will buy the lot at a slight advance on face value, on the chance of netting a large

number of the 1 franc and 5 franc values of the 1880-90 issue, which are now catalogued at about double their nominal price. The Luxembourg stamps are an unworked mine from a specialist's point of view, but their day will undoubtedly come.

—:o:—

FRENCH MINOR VARIETIES.

In addition to the interesting variations of type of the 1870 or "Bordeaux" issue, described in my brief article on French stamps, there is a variety of the current issue which is unknown to the great majority of young collectors. On every French stamp of the current issue there appears in very, very minute type—so minute that a glass is necessary to decipher the letters—the name, "J. A. Sage, Inv." It is in this name that the variation of type occurs.

In *Type I.*, the "n" of the "Inv." comes under the "b" of *Republique*, thus:

REPUBLIC
JA SAGE INV

Whereas in *Type II.*, the "n" of the former comes under the "u" of the latter, as in the following enlarged reproduction:

REPUBLIC
JA SAGE INV

I know that in the eyes of many Philatelists, both young and old, this searching after microscopical differences of type appears to be somewhat ridiculous, but such objectors cannot be true Philatelists, or they would know that this very spirit of thoroughness is the spice of the stamp collector's life.

There are other less notable French varieties which I had hoped to illustrate, and which I may describe in some future number; but in the meantime it is pleasing to read in the *Stamp Collectors' Fortnightly* that the stamps of France, too long neglected by specialists, are to be the subject of an exhaustive treatise by the Philatelic Society of Nancy.

The practice of selling Government "remainders" of postage stamps to dealers is growing. The stock of the 5 pesetas stamp of Gibraltar—which, by the way, had long been obsolete—was cleared out some few weeks ago. There were only 6,000 specimens on hand, and this number will be easily absorbed by the Philatelic community without any perceptible depreciation of the market value of the stamp. Another stamp which has shared the fate of the Gibraltar 5 pesetas is the St. Helena one shilling, with "Crown and C.C." watermark. The purchaser in this case was Mr. T. H. Thompson, the enterprising speculator who bought up all the stamps of the Leeward Islands—Antigua, Montserrat, &c.—on the occasion of the islands of the group being formed into one postal confederation. The St. Helena stamps must have produced a sum that will be most useful to the Government of that notoriously impecunious colony.

NEW ISSUES OF STAMPS.

* Items for this department will be gratefully received from any Philatelic readers who happen to receive early information of new issues, or of impending changes in the postal arrangements of any country.

GERMAN EAST AFRICA.—Hitherto, as most readers know, the stamps used in German East Africa are the ordinary stamps of the German Empire, surcharged with their respective values in native African currency; but it has now been decided to create a distinct issue by the addition of the words "Deutsch Ost Afrika" to the current German stamps.

TURKEY, as was rumoured some weeks ago, has really decided upon a complete new issue of stamps, which are now in active preparation. Nothing is yet known as to design or number of varieties, but it is stated that the new stamps will be far more modern and up-to-date than any yet issued by the Sublime Porte.

HOBBIES' SUPPLY DEPARTMENT.

—:o:—



E may again refer readers to Nos. 20 and 21 of *Hobbies* for a full explanation of the Supply Department which we have just established.

We are confident that the Department will prove of the greatest service to our readers, and we are especially glad to notice the widespread interest it has already excited. As we anticipated, and as perhaps is but natural at this season of the year, a large proportion of the enquiries received relate to Photographic Apparatus. We may therefore repeat that the experience of our Photographic Editor is entirely at the service of our readers. He will be pleased to answer any questions and to give advice as to the purchase of apparatus, and, if desired, the Manager of our Supply Department will undertake to obtain and forward the articles that may be required. The same thing applies with equal force to other departments. All the subjects dealt with in *Hobbies* are under the control of experts, and we are only too glad to place their knowledge and experience at the disposal of all who may desire to take advantage of them. We want to make *Hobbies* an absolutely indispensable paper to all who know it, and no trouble will be spared to attain this object. We trust, then, that no reader will hesitate to write to us upon no matter how small a subject, and if there should at first be any slight delay in meeting the requirements of any of our readers, this will disappear when our Supply Department has got into thorough working order, and we are able to calculate with greater exactness the demands which are likely to be made upon its resources.

The value of the scheme to our readers cannot, we think, be exaggerated, and we shall by thus increasing the usefulness of *Hobbies* extend its circulation and its influence. We cordially invite all who think we can be of any assistance to them to write to us without delay. All letters should be addressed to The Manager, "Hobbies' Supply Department," Bouverie House, Salisbury Square, London, E.C.

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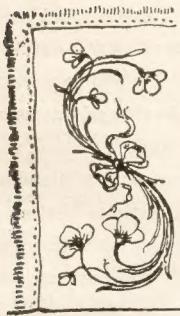
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THE ART OF

SATIN PAINTING—
FOR AMATEURS

CHAPTER I.



SATIN Painting has many recommendations. As an employment for ladies it is eminently suitable, and, as a rule, well-paid; as an accomplishment it is pleasant, useful, and effective work. Added to these advantages it offers a wide variety in choice of subjects. They range from fans, satchets, table cloths, and such-like things, to the trimmings and trains of dresses.

Satin Painting, too, is a comparatively easy accomplishment, that is to say to anyone who has mastered the principles of painting, and who can wield the brush with a certain amount of success. Water colours or oils can be used with equal effect, but the latter is the least complicated method of the two. In this chapter, however, water colours only will be dealt with.

The requisites are these:—

1. A drawing board and drawing pins.
2. A tracer and transfer paper.
3. Three or four brushes of different sizes.
4. A bottle of ox gall.
5. Gum arabic.
6. Methylated spirit.
7. Glycerine.
8. Water colours in tubes and a palette.

The next point to be considered is the important one of material. The silk or satin must be carefully chosen and must be good material. It must be plain, without pattern, and of a close texture. In buying satin examine the surface carefully and reject any that has a woolly or uneven appearance, as a perfectly smooth ground is a necessity if a good result is to be produced.

Silk must undergo preparation before painting is commenced, but this is not necessary with satin. Prepare the silk in the following way:—Place a sheet of thin paper on to the drawing board and pin the silk over it, stretching it carefully and firmly. Then mix the size. Soak one ounce of gelatine in cold water for an hour; add one pint of boiling water and stir until it is

thoroughly dissolved. While still hot, sponge the material evenly with it. Care must be taken not to let the liquid run through, and the silk must not be removed from the board until quite dry.

The next step is to trace the design on to the material. This must be done by means of transfer paper—white, blue, red, or black, according to the colour of the silk. The design must first be traced on to tissue paper and then impressed on to the silk by means of the tracer. When this has been done a groundwork of Chinese White must be laid over the entire pattern. This must not be put on thickly, but just sufficient to cover the pattern, so that the colour of the material is hidden.



FIG. 1.

Chinese White is used more than any other colour in Satin Painting, and it should therefore be of the very best. There are two kinds sold—one kind made with Zinc White and another quality with White Lead. The former should always be used, as the latter is apt to discolour in a short time. It will also be found best to buy Chinese White in bottles instead of in the usual tubes, as being a heavy colour it sinks to the bottom and requires frequent stirring. When a portion of the ground has been covered, it is advisable to touch it gently with the finger in order to see whether or not it rubs off, as, if it does so, one of the mediums mentioned must be used.

A word as to their various uses. Gum Arabic is often found necessary to prevent the colours from rubbing off and to assist them in drying more quickly. If on the contrary the colours dry too hard, a little Methylated Spirit should be used with the water. Ox Gall is generally considered to brighten the colours, and it also prevents them from becoming too thick and spreading unevenly:—Two drops in a saucer of water is a sufficient quantity to use. The chief use of Glycerine as a medium is to prevent the paint cracking and peeling off. It should be used in the same quantity as Ox Gall.

There is not much to be said on the subject of the actual colouring, as that is dependent almost entirely on the artistic sense of the painter. One thing, however, should always be recollected, namely, never to lay one colour on another until the first is perfectly dry. It may also be remarked that it is better to put on the deeper shades first, and, by mixing the colours with white, to paint gradually the lighter shades until the high lights are added with touches of pure white.



FIG. 2.

In painting any portion of a gown, such as a train or panel, light and shade should be most carefully studied, as upon that the effect of the whole greatly depends. All refinement of detail in such a case is naturally quite lost. Fig. 1 represents a black satin train with a spray of mauve Clematis painted up the left-hand corner and continued half-way along the edge of the train. The gown, as seen by the writer, was extremely effective, the bodice being trimmed with mauve chiffon and old lace, and the train lined with mauve satin. A similar dress would look equally handsome with a panel down the front painted with mixed mauve and white Clematis.

The second illustration is of quite another kind. This handkerchief satchet should be made of the palest shade of pink satin or silk, and the rosebuds painted very delicately a deep pink and red colour, with the leaves of a pale green.

(To be continued.)

Photographic Hints for Amateurs.

TO DRY A NEGATIVE.

When it is desirable to dry a negative quickly, place it in a dish of methylated spirits for five minutes. Take it out and it will dry very quickly. See that the hypo is thoroughly washed out before immersing the negative, or trouble will ensue.

PLATINUM TONING.

Stock Solution—

Chloro-Platinite of Potassium ..	60 grs.
Distilled Water	2 ozs.

Toning Bath—

Platinum Stock Solution ..	1 drm.
Water up to	2 ozs.
Nitric Acid	2 or 3 drops.

This bath will give a vigorous black tone. For warm, intermediate tones dilute the bath and stop toning at any desired depth. Before putting the prints into the fixing bath (three ounces of hypo to one pint of water) they should be placed in a 5 per cent. solution of carbonate of soda. After this wash in water and fix in the usual hypo bath for ten minutes.

STEREOSCOPIC PICTURE MADE IN 1861.

We have before us a stereoscopic print from a negative taken in India in 1861, with one lens, by Mr. John Mills, a veteran Photographer. In sending us the picture he says:—The negative was taken on Latimer Clark's principle, which far surpasses, for inanimate objects, the two lens method, as any amount of stereoscopic effect can be obtained, and as a minor advantage the two pictures do not require to be reversed, but are ready for mounting as they are printed. The plate was a freshly sensitised Collodian plate, flooded with a solution of Tannic acid. Thus made, Mr. Mills tells us, the plates would keep good for many weeks both before and after exposure. The subject was a jungle scene, great prominence being given to a cluster of dry bamboos. The exposure was about 30 seconds.

BROWN STAINS ON NEGATIVES.

The stains are very often due to the sticking of sensitised paper to the negative. The causes are numerous—moisture on paper or negative—storing in a damp place—getting a drop of water on paper or negative, &c. The stains may be removed by using Cyanide of Potassium, which may be applied in the following manner so soon as the stain is discovered. When ready to proceed place the negative in a dish of water and allow it to soak, then, by lightly rubbing, remove any paper that may adhere to the negative. Lay the negative on a piece of glass and lightly rub with a pad of wash leather, occasionally dipping the same into a saturated solution of Cyanide of Potassium. This may be continued until the stain has disappeared. Then thoroughly wash the negative for quite half-an-hour and allow to dry as usual.



DISEASES AND THEIR REMEDIES.



HE lives of many pigeons might be saved if their owners had each a slight knowledge of their ailments, and could lay their hands upon some simple remedy. The treatment may be simple. Suppose, for instance, a pigeon fed on sound old beans falls ill. See what a vast difference is effected

when a change of diet, say a little hemp, is given. It is astonishing how a change of diet to softer food will freely purge a pigeon, and it may be added that the same system applies to directly contrary treatment. It may seem a trifle for a bird to suffer from so simple a thing as a cold; still, such an illness often carries a bird off. The signs are watery secretions in the nose or eyes. It is then advisable to remove the bird to a warm pen by itself, give it a nice pinch of Epsom Salts, and bathe the legs in hot water at night. Care, however, must be taken to well dry them afterwards. A capital treatment is to drop a *little* spirits of camphor on sugar, and break it up into a few little bits about the size of a pea. Always, however, remove the bird out of all draught, and if the running is at all profuse, bathe the eyes in warm tea. In very severe colds a little spirits of turpentine may be rubbed in a *small* space between the shoulders. During this illness give mainly oatmeal pills, slightly moistened with milk. Constipation can generally be cured with a simple remedy of a teaspoonful of warm treacle.

Diarrhea is a common complaint and a dangerous one. A castor oil capsule or a few drops of rhubarb and laudanum, mixed by a chemist, will bring about a cure. If not, give at intervals three drops of chlorodyne. "Going Light" is a dreaded disease, often found in poultry and pigeons, and especially when the birds are going through their first moult. If attacked with inflammation of the bowels, the treatment is the same as that recommended for diarrhea. If the bird seems really wasting away and appears to gasp for breath, a few drops of syrup of hypo-phosphite of soda will, if given daily, often cure it, or Parrish's Compound Syrup of Phosphates will often have a good result, as will also capsules of cod liver oil. Roup should be treated in the same way as colds. The symptoms too are similar, only much more aggravated. Clean the nostrils

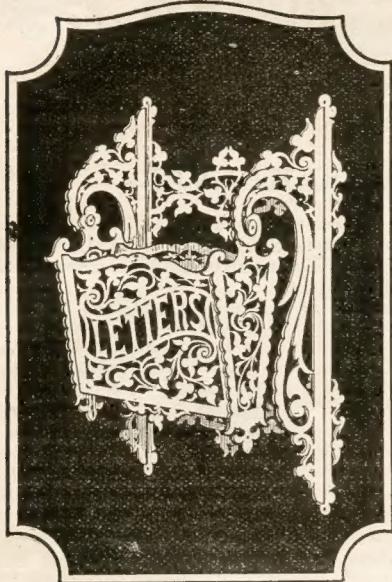
tenderly morning and night with diluted chlorated soda.

It often happens that a bird meets with a fractured leg bone, and here, if a valuable pigeon, a little advice will be useful. Let a friend hold the bird firmly, and having put the bone in proper position, mix quickly some plaster of Paris with water, and mould a ring of it round the leg, extending an inch above and an inch below the fracture. Then wrap a strap of lint, saturated with lacurium, round the whole, and tie with thread. Keep the bird in a cage where it cannot move about much, and in a week or ten days it will probably be well enough to walk. In cases of a bruise or crush of the foot the best treatment is to foment with hot water, and, if possible, put on a small bran poultice. If there is any discharge dress with glycerine and carbolic acid, one part of the latter to twelve of the former. Should a case occur of swelling of the crop (often the result of giving corn too new), the best method of treatment is to give a good dose of castor oil, and afterwards keep the bird without food for a day. In an urgent case, if the bird shews signs of collapse, stimulants, such as *sal volatile*—or perhaps the readiest would be brandy—must be administered, and, if possible, a part or whole of the contents of the crop should be removed. Essence of ginger or cayenne, in one or two doses, is a useful temporary stimulant. Sometimes light-coloured pigeons get soiled with tar. This can be removed (or at least the worst) by rubbing the feathers with sweet oil.

Canker and Diphtheria. The former is an ulcerous or foul growth on the head of the pigeon, and is often difficult to heal. The cause of this dreaded disease is, no doubt, foul water. The first remedy is always continuous doses of Epsom salts, and application with a small brush of carbolic acid to the cankered spots. Sometimes it comes in the mouth, ear, &c., when the best remedy is to apply a solution of one part of acid to eight parts of glycerine. When canker attacks the throat it is generally termed diphtheria. It is often to be found where young birds are too closely confined. A rhubarb pill will often do good, but the most effective plan is to paint the throat with the following prescription:—carbolic acid, one drachm; sulphurous acid, three drachms; solution of perchloride of iron, half-an-ounce; and glycerine, half-an-ounce. During the existence of these complaints great care must be taken to thoroughly disinfect the loft and all accessories.

Our Weekly Presentation Design.

No. 24.—SWING LETTER HOLDER.



FOR this Pattern three-sixteenths inch wood should be used for the Back piece and the two Brackets, and one-eighth inch for the Letter Basket. The choice of wood may be a matter of opinion, but we might suggest Pencil Cedar or Satinwood as a suitable variety. If a quiet contrast were desired, either of these woods mixed with White would look well. Of dark woods, Padouk might be recommended.

The Bracket and Back are simple to cut, and will not give much trouble even to a beginner. The Basket, however, requires more care, especially if the article when made is to be of everyday use. The actual cutting is finer, and the fitting together demands more skill. Glue is almost necessary, but great care must be taken not to splash it all over the wood. Nothing looks worse on a finished Fretwork Article than streaks of glue near the joints. As glue will hardly be sufficient to hold the pieces together, screws or pins should be used. The method of fixing delicate articles by means of pin points has often been described in *Hobbies*, and readers must already know how to use them. With these pin points, good glue, and careful fitting, the Basket should be perfectly strong.

Ordinary wire nails are not recommended, as they are no stronger than pins, and being thicker they tend to split the wood. In addition to this, their unseemly heads are always an eyesore. Round-headed Brass screws, about three-eighths inch long, may be used; these are strong, and the heads are not so objectionable.

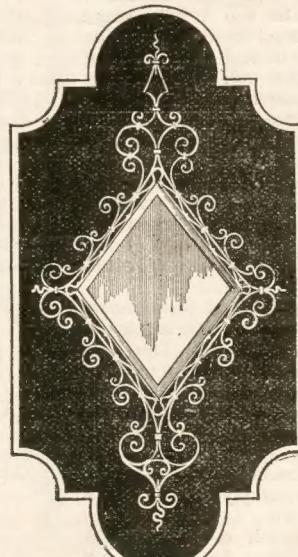
In fixing up the article, particular attention must be paid to the pin hinges on which the Basket swings. The "swing" idea is a feature

of the Design, and the fitting of this part must be done neatly, and at the same time strongly. The Pattern has been drawn so that the Basket will come exactly between the two Bracket arms with a Washer between each piece of wood; that is to say, the space between the two arms is equal to the length of the Basket plus two Washers. The exact thickness of these Washers can be determined after the rest of the article has been cut out. The pin hinge may be of wood or of wire. If wood is preferred, an old pen-holder may be cut to size, and trimmed down till it is about one-eighth inch or three-sixteenths inch in diameter. If wire be chosen, a fairly stout knitting wire will be suitable.

It must be understood that this is the last part of the work to be undertaken, and all sandpapering and other cleaning up must be done beforehand. Whether a wire or a wood pin hinge is selected, the whole in the Basket-end through which it passes should be made so that the pin will fit it tightly. The corresponding hole in the Bracket must be wider, so that the spindle will revolve freely. All this will suggest itself naturally to the Fretworker, and although care is necessary, he will not encounter any real difficulties,—unless he creates them himself. Press the spindle through the Basket-end hole, and fix a solid washer on the inside; then slip over the middle washer, which should fit easily, and pass the spindle through the Bracket-arm hole, fixing another solid washer on the outside. Thus, three washers are used for each pin hinge, two outer ones to hide the spindle ends, and one in the middle to prevent the Basket from rubbing against the Bracket on which it swings.

The two Brackets must be firmly fixed to the Back, so that they may not move and thus spoil the two pin hinges.

No. 25.—BENT IRON WORK WALL MIRROR.



The above sketch is a miniature of the full-sized Pattern for a Bent Iron Work Wall Mirror, which will be given away with each copy of next week's issue of *Hobbies*.

BENT IRON WORK

HOW TO MAKE BOOKSHELVES.

BENT Iron Work Bookshelves are not seen so often as they might be, and this is due partly to the scarcity of all Bent Iron Designs, and partly to the difficulty of obtaining a suitable framework. Framing is certainly an important consideration, and the chief aim in this article will be to suggest a simple and yet effective method. At the same time the Pattern given may be regarded as a working drawing from which a Bookshelf can be made. It is one-third full size, and as the length of each curve and scroll is given, no great difficulty should be found in bending the Strip Iron into shape.

Fig. 2 shews the framework. Four pieces are required for each end, and as a Bookshelf must have two ends, eight pieces in all must be obtained. Any smith will supply these pieces at a small cost. The Iron should be $\frac{1}{4}$ -inch or $\frac{1}{2}$ -inch wide, and $\frac{1}{8}$ -inch (or rather less if possible) thick. The angle pieces need not be riveted, but should merely be bent to a sharp corner; this plan will cost much less. The smith should be instructed to drill holes where the screws are shewn, as this is a part of the work which amateurs are often unable to perform.

As may be seen at a glance, this method of framing is designed for strength. The three angle pieces are firmly screwed to the shelves, and are then joined to one common back bar. When this is done the article will be perfectly rigid, and yet can easily be taken to pieces by simply unloosening a few screws.

The width of Strip Iron should either be $\frac{1}{16}$ -inch or $\frac{1}{8}$ -inch. The width depends on the length of the shelves. For a 16, 18, or 20-inch shelf, $\frac{1}{16}$ -inch strips will be sufficient, but if the article were a couple of feet long $\frac{1}{8}$ -inch iron would look better. None of the curves are difficult to form, and with

the following sizes and particulars most Bent Iron Workers will be able to turn this Pattern into a handsome and useful little piece of household furniture.

Lengths of Curves:— A, $2\frac{3}{4}$ -inch; B, $8\frac{1}{2}$ -inch; C, 4-inch; D, 3-inch; this piece is merely slipped under curve B and is riveted with it to the framework. E, $2\frac{1}{4}$ -inch; F, 13-inch; G, $3\frac{3}{4}$ -inch; H, $2\frac{1}{2}$ -inch; this slips between curves F and L, and is clamped with them. I, $2\frac{3}{8}$ -inch; J, $2\frac{1}{2}$ -inch; K, $13\frac{1}{4}$ -inch. Care should be taken with these last two pieces to have the ends of the Iron hidden by Collar Bands. L, $21\frac{1}{2}$ -inch; the general proportions of this curve should be measured from the sketch (which is drawn one-third full size), as it is important that it should be correctly formed. M, 8-inch; N, $8\frac{1}{4}$ -inch; O, $3\frac{5}{8}$ -inch; P, $7\frac{1}{8}$ -inch. This strip joins the upper spiral of N, and, as it takes the outside, it should be allowed to terminate the curve; that is to say, the end of N should stop at the Collar Band, while the end of P completes the spiral. Q, $4\frac{3}{8}$ -inch; R, $3\frac{1}{2}$ -inch; S, 11-inch; T, $2\frac{3}{4}$ -inch.

These sizes have been taken from the full-sized Pattern and are accurate. Naturally, however, much depends on the tightness of the spirals, and it is unreasonable to suppose that the amateur will get everything to fit like a glove at the first trial. Unless he has made the spirals either very open or very close, he cannot be far wrong, and a little extending or compressing, and some shaping into form with the heavy Pliers should soon bring everything right. In doing this the diagram should frequently be referred to, as it

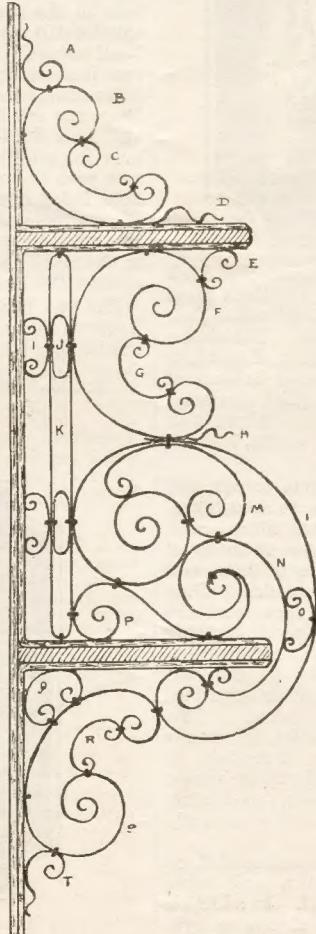


FIG. 1.

gives a correct idea of the proportion. As each end is actually in three parts, the work of fitting together is not laborious.

Collar Bands should be used only where absolutely necessary. The main curves must

be joined to the frames with rivets in the usual way. Many amateurs, of course, prefer wire to rivets, but the latter is certainly the neater method of fixture.

When both ends are so far made, the shelves must be procured. These may be $\frac{1}{2}$ -inch thick and any length from 16 inches up to 22 or 24 inches. The width of the upper one is $3\frac{1}{2}$ inches, and the lower one 4 inches. Polished Oak would be the most attractive wood, but Birch, Ash, Mahogany, and others would also suit. First take the

middle portions of the ends and screw them to the wood. (The Collar Band which joins

curves L and S together should not be fixed till afterwards; this will make the fixing easier, as it keeps the lower portion of end separate.) After this is done the back bar should be placed in position, and then the top and bottom portions of the ends fixed on.

The worker who has got beyond the initial stages of Bent Iron Work will find no difficulty in the fitting, and directions need not be given here as to every turn of the wrist. With all instructive articles a

certain amount must be left to the reader's skill and judgment; and here especially, when

it is impossible to give the full-sized Pattern, the detail work must be entrusted to the amateur himself.

The Bookshelf, when completed, should be screwed to the wall. For this purpose holes should be drilled at the top and bottom of the back irons. As the iron will be painted black, as usual, this should be done before the wooden shelves are fixed on.

FIG. 2.



FIG. 3. PLAN OF SHELF.

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Hints on Hobbies.

DETECTING PUNCTURES IN PNEUMATIC TYRES.

There are many ways of detecting these, and the following may be suggested:—Any likely-looking speck may be touched with saliva, and if the air is leaking a bubble will form. But the most certain way is by means of the water test. Take out the air tube, inflate it slightly and hold it piece by piece under water, when the escaping air will show itself as a string of bubbles.

HOW TO MAKE IMITATION IVORY.

A substitute for Ivory may be made by taking five parts of orange shellac, two of gutta percha, and one of pitch; these are melted in an iron pot and six parts of lead carbonate are added in a powder. The mixture should be thoroughly stirred and then cast in a suitable mould. The required colour may be obtained by the use of aniline dyes mixed with a dilute alcoholic solution of bleached shellac.

CLEANING CYCLE FRAMES.

A correspondent in the *English Mechanic* offers the following suggestions for cleaning a cycle frame:—Immerse the frame in a hot saturated solution of common soda; or if you wish to remove the enamel from one frame only, brush it over frequently with the same solution applied at boiling heat, until the enamel is perceptibly softened, then finish by scouring. We question very much whether the enamel on a cycle frame could be removed by any such solution. Should it be at any time necessary to remove the enamel it will be best done by scouring with dry emery powder. The saturated solution of common washing soda will doubtless thoroughly cleanse the enamel of grease or foreign matter, but we venture to think that it will have no effect upon the surface, at least so far as the removal of the enamel is concerned.

PLANT AND LEAF SKELETONS.

Plants and leaves may be easily dissected or reduced to skeletons by decomposing the soft, pulpy matter and separating it from the woody filaments. This dissecting may be done alike with leaves, fruits, roots, and even the petals of some plants. If these skeletons are afterwards bleached and mounted they make pretty ornaments, and may serve for useful and instructive purposes.

We will give brief instructions, which may be followed by members of either sex, and the preparation of leaf skeletons will while away the time very pleasantly.

To prepare the skeletons, &c., they should be macerated in water to the point of putrefactive fermentation, when the soft parts can be easily separated from the fibrous by washing in fresh water and blowing on them with a small pair of bellows, or by letting a small, but continuous, stream of water fall upon them. Great care must be taken to remove every part of the soft parts of the leaf with a camel hair brush or a fine needle. After this has been done the skeletons must be again washed in fresh water, and then immersed in a solution of chloride of soda or lime, and exposed to the atmosphere to bleach. When white enough they must be again washed, this time in diluted hydrochloric acid—one part of acid to 60 of water. After this has been done they may be dried and mounted.

Another way in which the decaying of the fleshy part of the leaves may be accomplished is by boiling and afterwards burying in sand or in the ordinary garden soil.

The best leaves to operate on are those of the ivy, holly, laurel, lime, maple, pear, orange, lemon, walnut, willow, chestnut, vine, palm, oak, &c.

To mount them, take a box deep enough to receive them, line it with black cotton velvet, arrange the skeletons according to taste, and attach them by fine flour paste or gum arabic in solution to the box. An old picture frame, with glass, may be fitted to the front of the box in order to exclude the dust. The form that these skeletons are arranged in must be a matter of individual taste. The combination of different leaf skeletons will give scope for artistic grouping.



BUYING A BICYCLE.

 One difficulty which the beginner at cycling almost always has to face is the purchase of a machine. It is a difficulty. Nine people out of ten know nothing about cycles or about machines of any sort. They find upon enquiry that there is a range of price in bicycles going from some £2 or £3, for a wretched specimen of a second-hand, out-of-date machine, up to a brand-new bicycle by one of the best makers, with all the latest improvements, with fittings and accessories complete, which may cost, all told, £25 or £26 nett. In the West End of London as much as £35 has been given for a bicycle, which was specially finished to the buyer's order, and we know a well-authenticated case in which the princely sum of 7/6 was paid for a racing "ordinary," or high bicycle.

Buying a bicycle is certainly an important matter, especially for those to whom a £10 note is a serious consideration. The purchase of a machine is indeed an investment on a small scale; with a good many people who plunge without due thought into the transaction it would be more correct to describe it as a speculation. The rather stupid English system of fancy-marked prices, with high discounts, does not tend to simplify the novice's task in buying. List prices and discounts are so varied that it is impossible to give any useful information on this subject. Some manufacturers' lists are held to be strictly nett to the private buyer, or are subject to only a small discount, but against this we must quote the instance of one small maker who once gave a friend of ours a quotation of 75 per cent. off marked prices. As a rough rule, the larger the discounts offered the less famous the maker. A discount of 15 to 25 per cent. can, however, frequently be obtained, through agents, from the price lists of many of the principal manufacturers. Accessories are almost invariably sold at fixed nett prices, although list discount quotations can generally be obtained, if desired, for the goods of some of the leading makers of the better class of lamps, bells, etc.

The best thing the novice can do who wishes to purchase a bicycle, and finds himself entirely without the necessary knowledge on the subject, is to first decide as to about how much money he is prepared to lay out, and then consult a

friend who knows something of the trade, or who at least has had some experience of buying. For those whose means are limited, and who are not prepared to lay out more than say £8 or £10, second-hand machines should be considered. It is often possible to buy a second-hand bicycle of really good make for something like half its original value, and such a bicycle, well bought, may last in good condition for years, far longer in fact, and at less cost for repairs, than many a bicycle which cost £10 new. There is, of course, considerable risk in buying second-hand bicycles, and some people make a rule never to purchase them except from friends. We should strongly advise the novice never to buy a second-hand bicycle unless it bears the name of a first-class maker, and unless the seller will guarantee it to be sound. There is nothing like good advice in such cases, and, wherever possible, inexperienced persons should never conclude a purchase without submitting the machine to the criticism of an experienced cyclist.

 New machines are perhaps as difficult to buy successfully as second-hand ones. The man who does not mind putting down £20 to £25 will, of course, go in for a first-grade bicycle by one of the best-known makers. He will perhaps be paying a stiff price, but if he can afford it he will be wise to act in this way, as he is sure to get a good and thoroughly reliable bicycle. Many people grumble at the figure asked for the first-grade cycles. Well there is certainly no denying the fact that £23 or £24 is a high price to pay, and when you pay it there is no doubt whatever that perhaps one-third of your money goes towards paying the maker's advertising bill. Still by getting the very best you are on the safe side, and should not grumble too much about the figure, and, in spite of the high prices which the most advertised makes command, we should not hesitate to advise those who can afford the money asked to pay it.

There are several very good makes of bicycles which are not so well-known as what are usually described as the "leading" makes. These second-string makers in many cases turn out their work to the full as well and as good as the very best. We cannot therefore call bicycles so made "second-grade," or "second-class." The difficulty the novice will be in is to distinguish

these "second-string" makers of first-grade machines from the over-priced wares of quite third-rate producers. This is, of course, where the advice of some experienced person will come in. Machines of these "second-string" makers come out at about £16 to £18 nett to the retail buyer.

The term "second-grade" is usually applied to bicycles which retail at £12 to £15. These are of various kinds, and it is here more especially where the average buyer, who knows but little of the cycle trade, will need to exercise care. Many of the leading makers build a second-grade bicycle which sells at somewhere about the figure named. In most cases these are the safest machines to buy at the price. Many of them are practically identical as regards general construction, frame, bearings, driving gear, etc., with the "high-grade" mounts made by the same firms, and which sell for double the money. These second-grades are generally constructed out of the very best material, and their parts are machined and finished by the same tools and under the care of the same men as the parts of the £25 bicycles. It is in the general fitting up and finishing where the inferiority of the big makers' second-grade bicycle becomes apparent. Cheaper chains, pedals, and saddles are often used. The enamelling is sometimes slightly inferior, and the putting together of the various parts, when the machine is finished, is sometimes rougher.

Generally speaking, the second-grade machines of the big makers are sound value, and form a good and cheap investment for the buyer who is not quite prepared to pay the top price. Beyond these machines there are hundreds of small makers who turn out a few bicycles a week, which they sell direct to their private customers at anything from £8 to £15. Many of these "little men" turn out excellent bicycles. We have seen machines made in this way, and sold for £12 or so, which were very little, if at all, inferior to the very best. While this is so, the inexperienced buyer must here be especially upon his guard against sharks. We know a man, by repute, who makes it his business to go round and buy up old disused bicycles and parts. These he puts together in the cheapest and readiest way possible, gives them one coating of cheap enamel, and then advertises them as £10 bicycles, fully equal in value to the very best made.

Those who decide to pin their faith to the small maker, and to what is technically known as the "Garret-built" bicycles, would do well to make most careful enquiries as to the reputation borne by the maker they propose to deal with, and inquire most carefully into the character which the machines he has made have earned for themselves on the road.

Many novices may have no cycling friends upon whose experience they would feel safe in relying. These we invite to send a letter to the Editor, mentioning the sum of money they are willing to spend, and stating if they have any special preference for any particular maker or description of machine. We will

then procure them really valuable advice from a thoroughly qualified expert, whose only consideration will be the interests of the enquirer, and who will have no predisposition in favour of any firm of makers. The Manager of our Supply Department will also be pleased to obtain any make of machine that may be preferred, and will be glad to answer any enquiries and quote lowest prices. It will also be seen in another part of the paper that we have arranged to supply *Hobbies* Cycles, both for men and ladies, at extremely low prices. These are high-class machines of thoroughly good material and workmanship, and a twelve-months' guarantee will be given with each machine. These machines will, we anticipate, prove an invaluable advertisement for *Hobbies*, and it is with this view that we are offering them at a very small profit.



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CHAP. VII.—DISEASES.



BEES are not exempt from diseases any more than are other members of the animal world. There are only two diseases to which bees are subject that really claim attention here, and though they are both the result, in most cases, of negligence, they are not of equal virulence. *Dysentery* is a disease from which bees are found to suffer after they have

been fed with unsuitable food and housed in damp and badly arranged hives. This disease can be prevented by carefully carrying out the instructions given under the heads of *feeding* and *wintering*. If it makes its appearance in the spring it is detected by the bees having voided the excrement upon the combs and all over inside the hive, thus creating surroundings most prejudicial to their health. Bees that are properly prepared for winter and exist during the winter months on pure food can remain some time confined to their hives without discomfort. The mere fact of bees voiding a dark and coloured excrement on the hives and surroundings, when they are taking a flight on a warm day early in the year, must not be taken altogether as a sign of dysentery, as it is the usual accompaniment of a cleansing flight when breeding has commenced and the food contains pollen.

Any stock showing unmistakeable signs of dysentery should be attended to at once. The worst combs should be taken away and others given if there are any on hand; if not, they should be syringed with warm water to which a disinfectant has been added. It is best to put the bees upon clean combs; give them a warm dry hive, and then give them about a pint of warm syrup and a good cake of soft candy.

Foul Brood.—This is a disease not so easily dealt with. It is caused by the presence and germination of a minute spore or seed; and it attacks all stages of bee-life. The name *Foul Brood* was given because the presence of the disease is most noticeable in that stage when the brood is attacked, and converted into a state of

rotteness that gives off a foul and offensive odour. Very frequently the first intimation of disease is this smell arising from the interior of the hives and perceptible some distance away. If this is the case, the disease is in a most advanced stage, and nothing, save burning the bees, combs, and, in fact, all moveable parts inside the hive, and the hive itself, if not too valuable, is effective in preventing it spreading, as it is certain to do unless drastic measures are adopted and carried out.

Nothing has yet been found effective in destroying the germs of the disease that will not at the same time destroy the bees, therefore it is decidedly the safest method of dealing with stocks containing millions of germs, to put them without delay upon a bonfire.

When the grubs are attacked, instead of being pearly white and curled up, they stretch out in the cells and turn a yellowish colour, but gradually they become coffee-coloured, and ultimately present only a dark, sticky, and stringy mass at the bottoms of the cells.

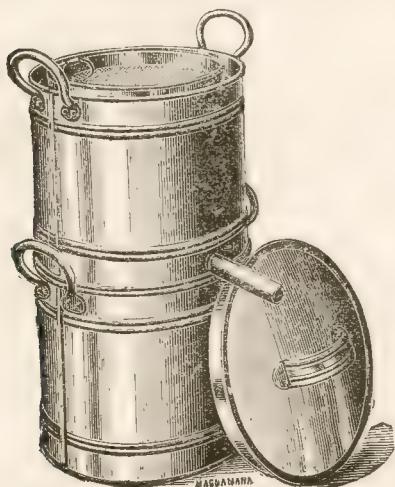
If the grubs are attacked just before the cells are sealed over by the workers, they die, and then, instead of the cappings protruding as they usually do when covering healthy brood, they appear sunken and are pierced with irregularly shaped holes. Such combs must be burnt. If only a few grubs here and there are attacked, a cure may be effected by giving syrup in which Napthol Beta has been dissolved in the proportion of three grains to the pound of sugar used. This is the simplest and most effective of all the well-known remedies; and it is strongly advised, to the exclusion of all others, by the greatest living authority, T. W. Cowan, Esq., Editor of the British Bee Journal. Napthol Beta is put up in shilling packets, each containing sufficient to medicate about 144 lbs. of food. In addition to feeding with medicated syrup, an antiseptic should be kept in all hives standing in an infected apiary or district; for should the disease get a lodgment in the hive, the fumes given off by the antiseptic prevent the development of the bacilli that result from the germination of the spores, and thus keep the disease in check.

The substance recommended for this purpose is Naphthalene (albo carbon), and is obtained either in balls or sticks. Two pieces about the size of marbles form a dose, and they should be dropped among the combs at the back of the hive so that they fall to the floor-board. The fumes will then circulate through the hive before being fanned out by the bees.

The disease is chiefly spread by contagion and by means of careless handling of diseased and healthy stocks indiscriminately, by the introduction of stocks from infected areas; but more particularly and doubtless to the greatest extent by robbing. If a diseased stock is attacked by robbers, it is almost an impossibility for any stock around to escape infection when all bees are joining in the plunder. Too much care cannot therefore be exercised in dealing quickly and thoroughly with the disease when it appears, nor in preventing and stopping robbing. Finally, I would urge all bee-keepers to aim at keeping "all stocks strong."

WAX EXTRACTING.

In every apiary there will always be a certain quantity of old combs and cappings which it is desirable to convert into marketable form; and, therefore, we must turn our attention to one of the necessary, though to some distasteful, operations in the apiary, in that without the use of modern appliances it is the most unpleasant and messy of them all. A simple means of obtaining wax from old combs is as follows, though I strongly advise the burning of all very old combs, as they yield so little wax; so little, in fact, that it badly repays the trouble taken to obtain it. Put the combs or cappings into a square of canvas along with a weight, draw the ends together and tie a string tightly round close to the contents, then drop the canvas bag into a pan containing sufficient water to keep it submerged a few inches. If then the water is brought to the boil, and the bag is occasionally pressed with a stick, the wax will be melted, and



WAX EXTRACTOR.

escaping from the bag will rise to the surface of the water. When it is thought that all the wax has risen to the surface, the pan should be set aside until the water is cold, when the wax may

be removed from the top in a cake, to be afterwards remelted and moulded to any desired shape. A very convenient machine, designed by Professor Gerster, is in the form of a saucepan and steamer, the latter containing a perforated zinc compartment in which the combs or cappings are placed to be exposed to the steam arising from the lower compartment containing water. As the wax melts it runs through the perforations and falls upon a plate, from which it runs through the spout shown into any receptacle placed to receive it. The refuse which remains in the zinc basket should be turned out while hot.

Solar Extractor.—Another cleanly and most useful article is the Solar or Sun Extractor, a box with glass-covered slanting front. In the bottom is placed a tray, and upon it is laid a sheet of perforated zinc. Upon the latter the combs are placed. On a hot summer's day it takes very little time for the sun's rays to separate the wax from the refuse. The wax falls into the pan, which may be a mould or moulds of the shape it is desired the wax shall take.

(To be continued.)

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How to make Photographic Enlargements.

DAYLIGHT AND ARTIFICIAL LIGHT.

WE will deal with daylight first, and endeavour to show how it is quite possible with the assistance of a little carpentry to make all the apparatus that is required. No special ability is required to make the necessary fittings; the cost will be trifling, and the result, if the work in making the fittings is properly done, will be in every sense satisfactory. In most houses it is possible to find a room with only one window; the smaller the room and the smaller the window the better. The window should, if possible, face the north, and it will be better if there are no trees near, as their branches are likely to intercept the light. An attic is convenient, but it is better if the enlarging table can be rigged up in the dark room. Still it is imperative that there should be plenty of direct daylight.

The light is the first consideration, and one of the causes of frequent failure in daylight enlarging is due to faulty light. As we have already said, a north light is best, and the next best is north-east. The reason for this is not far to find: the window is sheltered from the sun's direct rays, and hence the actinic value is much more constant. This is a strong point in these days of very quick Bromide paper. Light from the south and the west is subject to varying intensity, because of the contrasting sun's rays and passing clouds. In such a light, daylight enlarging becomes most difficult, and will more than likely lead to failure.

An experienced writer says in regard to the question of light and the different effects upon light:—When mist prevails the chemical rays of the sun are greatly retarded, and a much longer exposure will be required; the same remark applies to leaden skies. During a dry east wind the actinic power of the light is increased, because there is less vapour in the atmosphere. A rainy south-west wind brings with it an amount of aqueous vapour, and thereby reduces the chemical value of the light. As a rule the light is more intense and contains a larger proportion of ultra-violet rays just before mid-day than at any other time. As the day advances, extra vapour is created by the continued heat of the sun, and, in addition, the thickness of the atmosphere to be penetrated by the source of light becomes greater as each hour goes by. Masses of white clouds on an azure sky act as reflectors of light, increasing its intensity.

It is well, therefore, to select a day when there is a steady diffused light, when the sun is obscured by long thin clouds. Days when the sun is bright and overcast in turn should be avoided. A dull day is better than a fitful sunny day. It is quite easy to increase exposure on a dull day, but a flash of sunshine may result in over exposure and failure. If the negatives are thin ones, select a dull day to make your enlargements.

Our readers will understand that in the room, the position of which we have been at some pains to describe, all light must be blocked out, except that which will pass through the negative, and to this end it is well to make a screen to fit the window frame. Many Photographers content themselves with pasting the windows over with brown paper, ruby medium or some other fabric, which will exclude the actinic rays, but such procedure is a slovenly way of meeting the requirements.

Most readers of *Hobbies* can handle carpenters' tools, and will, therefore, have no difficulty in making a screen that will be light, portable, easily put up, and fulfil all the conditions required of it. Should the window be a large one, the screen may be hinged, so that it will double up when not in use.

It is not possible to give instructions which will be applicable to every case, but we will presume that the window consists of an upper and lower sash; in such a case it will be well to make the screen in two parts. The upper part may be made of match-boarding—taking care to paste stout paper over the grooving—or it may be a light frame covered with black twill, turkey red, or ruby medium. The frame should have top, bottom, sides, and cross bar, and, if made hinged, the hinges will come upon the cross bar, which should be on the same line as the centre of the window. In the lower half provision must be made for the carrier for the negative. The size of this frame will be determined by the size of Camera it is intended to use, and the size of negative it is intended to enlarge from. It will be best to make a frame that will fit the back of the Camera, and that will permit of the negative occupying the same position as the focussing glass.

The position of this fitting in the window screen will be regulated by the arrangement decided upon for table, easel, &c. All the other part of the window, except so much as will be required for the negative frame, must be covered so as to exclude all light.

A baseboard or table will now be needed. This may be a long board, and should be from 3 ft. 6 in. to 6 ft. long on the one end. The camera will be placed with the focussing screen end to the opening in the window already described, at the other an easel which must be at exact right angles to the baseboard, and must be so arranged as to admit of being moved along the baseboard, the size of the easel depending upon the class and size of work intended to be done. It will be easily understood that for large work such an arrangement will not answer, as the baseboard will cut off the rays of light. On the whole it is perhaps as well to have a small baseboard or table for the camera, and a moveable easel, either fixed on another table or stand, or a board set upon a frame made for the purpose. This will not present any very great difficulties, but it must always be remembered that the easel or board upon which the paper for the enlargement is placed must be in the same vertical plane as the negative, and the centre should always be the centre of the light rays projected through the lens. These are both important matters—coincidence in plane of the two surfaces and exact centreing of the rays of light.

The one other matter for this chapter is the reflector. Outside the opening in the window

frame, already described, a carrying surface must be arranged. This may be made in zinc, tin, or wood, and must be fixed at an angle of 45 to 50 degrees outside the opening, and upon this surface should be laid the reflector. It may be white paper, white cardboard, ground glass, or, better still, sheet of opal glass. When not in use the actual reflector should be removed. It is well, in order to ensure good illumination, to have the reflector considerably larger than the opening, at least half as wide again, and with as much added to it vertically. The angle at which it is fixed will in some measure be determined by the proportion the reflector bears to the opening.

In our next chapter we will give sketches of Frame, Baseboard, Easel, and Reflector.

(To be continued.)

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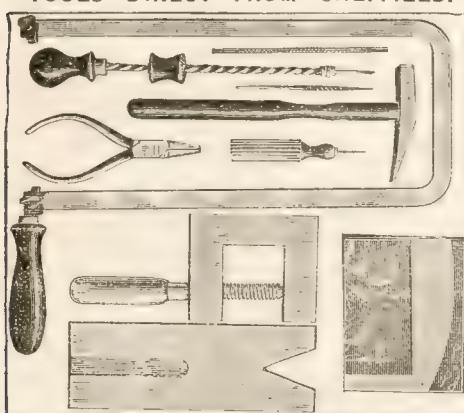
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	A.
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Bromide of Potassium	40 "
Metabisulphite of Potassium	40 "
Distilled Water (up to)	10 ounces

B.
Caustic Potass (sticks) 80 grains
Distilled Water (up to) 10 ounces

For use take equal parts of A and B mixed at time of developing.

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FIRST.—A. Downes, 35, Thornlaw Road, West Norwood.

SECOND.—H. A. Ellingworth, Lucifer Street, Oakham.

THIRD.—Florence Apps, 13, Darlington Road, Southsea.

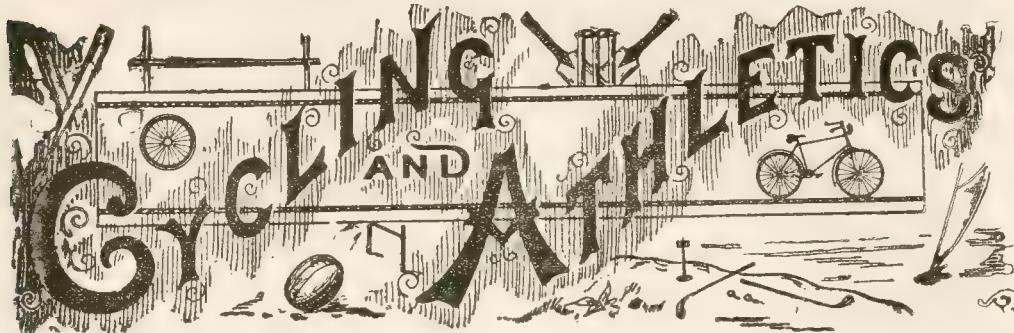
To each of these young people we have sent six lantern slides.

LANTERN MANAGEMENT: (1) Centre the jet properly and clamp it securely in that position before starting to exhibit. (2) Warm the lime before the maximum light is obtained. (3) Turn on the oxygen gradually, or it will probably crack the lime and most likely put the light out with a snap. (4) Always turn the oxygen on last and off first. (5) When operating for a lecturer, always be ready to change the slide the moment it is asked for. (6) Always get the slide to appear the right way upon the screen. Failure in this respect may amuse some audiences, but it will certainly annoy the lecturer.

AMATEURS' EXHIBITION AT CARDIFF.—In connection with the Cardiff Fine Art Industrial and Maritime Exhibition there is to be a section for the work of amateurs, which is intended to cover all branches of technical art and skill. No charge will be made for rent or entrance fees, and it is proposed to award certificates of merit to the best of the exhibits. Mr. W. H. Burrows, of 122, King's Road, Cardiff, is the honorary secretary.

NOTICE TO CONTRIBUTORS.

The Editor of "Hobbies" is always ready to receive Suggestions for Articles for insertion in the paper. Any manuscript sent for his consideration must however be accompanied by a fully addressed and stamped envelope. Unsuitable contributions will be returned without avoidable delay, but it must be distinctly understood that the Editor will not hold himself responsible for the loss of any manuscript.



NOTES ON SPORT.

JT seems as if the much talked of revival of the Olympic games at Athens would really be a most important and cosmopolitan gathering. At Athens preparations are even now being hurried forward with all speed. Money appears to be no object, one Greek gentleman having provided practically all that will be required. Running, jumping, and gymnastic competitions of various kinds will be the most important events, and it is said that a most perfect path will be ready for the crack pedestrians who make the journey to the classic city. So far no long race has been arranged; there is nothing, in fact, over 1,500 metres, which is rather less than a mile—but there will be short distance events in plenty. This is rather unfortunate for England, as our men, when opposed to European athletes, have always shone to best advantage in such contests as four to ten miles. It is stated that all the competitions will be strictly confined to amateurs, although it is as yet not quite clear as to the basis on which this regulation is to be enforced. Some of our continental neighbours have very hazy notions of what an amateur is. Who is to represent England has yet to be settled, but it is reported that G. A. Robertson, late of Oxford University, will take part in "Hurling the Disc," which is presumably the nearest they will get at Athens to our "Putting the Shot;" and E. L. Levy, of Birmingham, the amateur "strong man," was to have gone for the weight-lifting competitions, though particulars of these events have not yet appeared on the programme.

In connection with the Inter University Boat Race, the Cambridge eight is very well spoken of, and public sympathy will no doubt be with the light blues on the 28th. Cambridge has lost the last six consecutive races. The Cambridge crew this time is wonderfully powerful, the men being as fine a lot as ever sat in a University boat. Oxford, though not so heavy or powerful looking, are reported to have wonderful speed, and the dark blue men have rowed some remarkable trials in practice before coming to the Thames for the concluding weeks of training.

Wigram and Fitzherbert have been running each other very closely in the short distance events at Cambridge, both in college and also in the University sports. Both men are undoubtedly above the average. Wigram has been credited with 10 1-5th for the 100, in the wet, and at this distance he is faster than Fitzherbert, although at the quarter the latter is clearly the better man at present.

The Thames Hare and Hounds Club have been congratulating themselves upon their recent victory in an inter-club match across country over Rugby School. Possibly the Rugby boys are equally proud of having made so good a second to such a powerful club as the Thames. The Rugby team finished third, fourth, sixth, ninth, and tenth, and lost by nine points, a very good performance.

Birmingham is itself a very central place, but the little village of Minworth, seven or eight miles out, and boasting but very poor railway accommodation, can not be said to have been a convenient venue for the National Cross-Country Championship. One of the Vice-Presidents of the Association keeps an hotel, and it seems to be the rule to decide the champion-ship in the vicinity of that hotel, no matter where that

may happen to be. It has happened at two very awkward places already, Redditch and Minworth, and clubs are complaining, not unnaturally, and pretty loudly, at being forced to visit such very inaccessible spots. At Minworth the ground was two miles from a roadside station, and it rained hard. We need say no more to show that the Cross-Country Championship of 1896 was decided under not altogether favourable conditions. The race itself was good enough. Regarded both as an individual contest, and also in the more orthodox light of a club race, it was a great success. The struggle for first honours, both of men and clubs, was remarkably close. In fact, it is doubtful if a more exciting finish between so many nearly equal clubs has ever been seen. The winners, Salford Harriers, ran up a fairly big total of 116. Birchfield were but five behind this with 121, while Finchley (145), Essex (161), Ranelagh (178), and Manchester (194) were all near enough to be dangerous. It was curious that the Manchester club, after placing both first and second man in the race, failed as a club to secure a more honourable position than sixth. Essex had their first five men all within the first 30, and they were very nearly winning at this point, but the last of the six did not arrive until 72nd, or a long way behind even Manchester's last man, and this threw the club back fourth. Both Salford and Birchfield ran very even teams, Morton for the former, and two or three of the Birchfield, being the oldest of old staggers at the game, and, indeed, considering their years, it was really wonderful to see how well they went. Birch, of the Birchfield, who finished fourth for his club, and 22nd in the actual race, has been running for untold years, and must be 37 or 38 years of age. He is also the father of a large family.

The National Cyclists' Union is continually getting into hot water. This time it is over the date of the amateur championships. It does, indeed, seem curious that these important races should be fixed for so early in the season as the 29th of May. By that time few men are at their best, as form, like the weather, is decidedly uncertain. Worse than that is the effect of these too early championships robs local championships and other important events of a good deal of their interest. The best month for the English Amateur Championships would be July.

Some people are very fond of poking fun at the society cyclists for confining their riding to the roads in Hyde Park. But the fashionable wheelers have this to be said for them, that they are not afraid of a little bad weather. We have seen the Park fairly full on days when a decidedly unpleasant drizzle was coming down, and when the weather looked anything but attractive—or such days, in fact, when many of the critics would not think of venturing out a-wheel. There has not been very much attractive weather so far this year. We are moving well on towards spring, and lamp-lighting time is not now till about half-past seven. Easter is close, and those who contemplate cycling at the first holiday of the year would do well to be getting as much practice as they possibly can. It is wonderful what difference it makes on an Easter tour whether the tourist is in form or not. It often makes all the difference between a pleasure and a toil. A good piece of advice for the Easter tourist is to lay out a very quiet and easy programme. If the tour is pre-arranged, no day of more than 50 or 60 miles should be put down.

PRIZE Competitions

A Competition for Everyone.

We will give a PRIZE of ONE GUINEA for the best, and one of HALF-A-GUINEA for the second best, description of how to make any article intended for either use or ornament. The descriptions sent may be just as short as desired, but they must not in any case exceed one thousand words. Where illustrations are necessary to make the explanations clear, sketches of either a rough or finished character should be sent. We place absolutely no restrictions upon the choice of subject, and the article described may be of wood, metal, cardboard, silk, wool, or paper, or, in fact, of any material that may be preferred. It is desirable that the articles described should, if possible, be of a novel character, and the descriptions must be thoroughly clear and practical. The Competitors cannot, indeed, have better models than the short articles which have appeared in *Hobbies*, such for example as that on "How to Make an Imitation Marble Chess Board," in No. 20, or that on "How to Make a Folding Bookshelf," in No. 4. We cannot undertake to return any manuscript sent, even if stamps be enclosed for the purpose. The descriptions to which the prizes are awarded will be our absolute property, and we shall reserve to ourselves the right to publish any others which may seem suitable. These will, however, be paid for at our usual rates. All entries must be received at our Office, Bouverie House, Salisbury Square, London, E.C., not later than Saturday, April 4th. The envelopes should be marked "Description Competition."

Photography.

Every month we give a prize of TEN SHILLINGS for the best PHOTOGRAPH, and FIVE SHILLINGS for the second best. Subject for this month—"Landscape and Seascape." The print may be by any process, and from any sized negative up to "whole plate." Photographs cannot be returned, and we reserve the right to reproduce any of them in *Hobbies* if thought desirable. Photographs for this Competition must be sent to our office not later than March 31st, marked "Photograph."

Bent Iron Work.

For the best BENT IRON WORK GRILLS, made from Presentation Design No. 14, we offer one Prize of a GUINEA, and one Prize of HALF-A-GUINEA.

All matters relating to the actual work, i.e., width of metal, method of fixing, etc., are left entirely to Competitors, and the awards will be given to those examples which show the best general work.

Every Competitor should write his or her name clearly on a label which must be attached to the Grill itself.

All Grills sent in for Competition will be returned if desired, and for this purpose fully stamped and addressed labels must be enclosed. In no case can articles be returned unless sufficient stamps are sent.

Articles should be marked "Grill," and must be received at our Office not later than March 31st.

Fretwork.

For the best FRETTWORK MODEL of a VICTORIA, made from the Design presented with *Hobbies* No. 10, we offer Two Prizes:—

First Prize—An "IMPERIAL" TREADLE FRETT-SAW, with Superior Tilting Table for Inlay Work, Vertical Drilling Attachment, and all Modern Improvements.

Second Prize—A Finely Finished Treadle Fret-saw, with Nickel-plated Tilting Table, Emery Wheel, etc.

The choice of wood, method of cutting, and all matters relating to the actual work are left entirely to the Competitor. We would strongly urge, however, that all Articles should be left plain, and that no polish, varnish, stain, or paint of any kind be used.

Every Competitor should write his or her name clearly on a label which must be attached to the *Victoria* itself.

Articles sent in for Competition will be returned, and in every case it must be stated clearly whether they are to be sent back by post or rail. If by post, sufficient stamps must be enclosed, and these should be affixed to the addressed label. If returnable by rail, the name of the nearest Railway Station must be clearly given.

As the work of unpacking and repacking these Fretwork Articles entails a great amount of labour, we must ask Competitors to adhere to our rules and suggestions as closely as possible.

All Articles sent in for Competition should be marked "Victoria," and must be received at our office not later than March 31st.

NOTE:—As many of the Victorias already sent in for Competition have been received in a damaged state at our Office, we would strongly urge other competitors to pack their Models more carefully.

Wood Carving.

For the best CARVED BLOTTING BOOK COVERS, made from Presentation Design No. 15, we offer Two Prizes:—

First Prize—ONE GUINEA.

Second Prize—SET OF TWELVE SUPERIOR CARVING TOOLS.

The choice of wood and method of carving and finishing are left to Competitors.

Only one side of the Blotter should be sent, and the Carving should not be made up in book form.

Every Competitor must write his or her name clearly on a label which should be pasted to the back of the article.

Articles sent in for Competition will be returned if desired, and for this purpose fully stamped and addressed labels must be enclosed. Blotters cannot be returned unless sufficient stamps are sent.

Articles should be marked "Blotter," and must be received at our office not later than April 30th.

NOTICES TO COMPETITORS.

All Articles, Sketches, etc., for Competition should be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. The name and full address of Competitor must in every case be sent.

NOTE:—No correspondence can be entered into with Competitors, and all awards made will be final.

HOBBIES' BICYCLES.

First-class Machines for £11 each.

EXCEPTIONAL OFFER ~~£12~~
+
TO OUR READERS.

A Guarantee with Each Machine.



In another part of the present number of *Hobbies* there will be found an extremely useful and interesting article giving advice as to the choice and purchase of a bicycle. Reading this article, we, to some extent, realised the difficulties and perplexities which confront the great majority of people who are anxious to purchase a machine.

They are unable or unwilling to spend the £20 or more which would admit of their buying a high-grade machine from one of the half-dozen large makers, whose names are in themselves a sufficient guarantee of quality, and they feel utterly at a loss to know how to lay out to the best advantage the £10 or £12 which they are prepared to expend. As the writer of the article to which we refer has pointed out, really serviceable machines may be obtained for this sum if the buyer knows just what to buy and what to avoid. The difficulty, of course, is that the majority of purchasers have not the kind of special knowledge which is necessary, and they are in consequence compelled to trust to the advice of their friends, or, failing this, to more or less take their chance among the large number of makers who now advertise low-priced machines.

We have given a good deal of consideration to this matter, and we have as a result succeeded in making arrangements which will enable our readers to obtain really high-class and serviceable machines at a moderate price, and which will, we anticipate, at the same time prove a very valuable advertisement to *Hobbies*. We have entered into a contract with a firm of manufacturers who have a high and well-deserved reputation throughout the trade for the excellent quality of the material and workmanship which is put into their machines. We have, in view of the large number of bicycles we expect to dispose of, succeeded in securing exceptionally favourable terms, and, although we do not pretend to sell the machines at absolutely cost price, we are satisfied with placing upon them a very small profit, looking chiefly to the excellent advertisement the paper will receive from their sale. Our readers will therefore be able to obtain the machines at a far lower price than they could buy them in any other way, and they will, in fact, be securing a new bicycle of the first quality at the price of only a good second-hand machine. The offer is in every respect perfectly genuine,

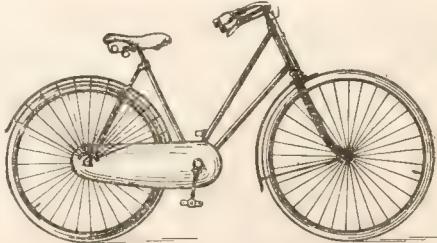
and is one of which our readers will be perfectly safe in taking advantage. The quality and workmanship of each machine is formally guaranteed by the maker. We have selected what we consider to be the most suitable machines for both ladies and gentlemen, and below we give particulars of them with illustrations.

THE HOBBIES' ROADSTER, £11.



This is a thoroughly useful Roadster, well-built and containing the very best materials. The wheels are 28 in. by 1½ in., and have Roadster hubs with tangent spokes and solid rims. The wheels are fitted with Dunlop tyres. The frame is made throughout of large-size weldless steel tubes, with narrow tread, dust-proof bracket, and 6½-inch detachable cranks. It is fitted with rubber brake, mud guards, and detachable foot rests. It is supplied with Lamplugh's hammock saddle, and will be fitted with rubber or rat-trap pedals as may be desired. It is geared to 60-inch, unless any other gear is ordered. The machine is enamelled black, and the handle bar, cranks, seat pillar, and other bright parts are highly nickel-plated. If preferred, the bicycle can be supplied as a light Roadster, without brake and guards, the weight then being 30 lbs. The price is £11, and the money must in all cases be sent with order. *Hobbies*' Coupons will be accepted as part payment in accordance with the conditions explained on the Weekly Presentation Design.

HOBBIES' LADIES' BICYCLE, £11.



This is an admirable pattern for a ladies' machine, full room being allowed for the dress and for mounting, while the frame is specially strong and rigid. The size of the back wheel is 26 in., and of the front wheel 28 in. They have Roadster hubs with direct spokes and solid rims, and are fitted with Dunlop tyres. The frame is made throughout of best weldless steel tubing. There is a rubber brake to the front wheel, and the bicycle is fitted with rubber pedals, lady's hammock saddle, and patent leather chain dress guard with laced cord guard. The machine is enamelled black, with the bright parts hand-

somely nickel-plated. Price £11. The weight is about 34 lbs. Cash must in all cases be sent with order, and *Hobbies*' Coupons will be accepted as part payment in accordance with the conditions laid down on the Weekly Presentation Supplement.

EVERY MACHINE GUARANTEED.

The demand for cycles for the coming season has been so unexpectedly large that all the principal makers are full of orders, and some delay in despatching machines is unavoidable. We have, however, laid special stress upon the importance of prompt delivery, and we anticipate that all the *Hobbies*' machines will be sent off, at the latest, within a few days of receipt of orders. It is, however, desirable that orders should be sent at once, before the season is further advanced, and they will be executed in the order in which they are received. As already mentioned, a guarantee has been obtained from the maker, the precise terms of which are as under:—

"I guarantee, subject to the conditions mentioned below, that all precautions which are usual and reasonable have been taken by me to secure excellence of materials and workmanship, and I undertake to make good at any time within a year any defects in these respects in my cycles. This guarantee does not apply to defects caused by wear and tear, misuse, or neglect. If a defective part should be found in any Machine it must be sent Carriage Paid with name of sender and number of machine attached. The sender must send advice by post stating that no accident has occurred to machine, and intimating desire to have it repaired free of charge."

This guarantee does not apply to the accessories of other makers, such as tyres, saddles, etc., supplied with the machines. These are, however, obtained from well-known firms and are of the highest quality procurable. It may be added that the Manager of our Supply Department will be pleased to procure any other machines that may be desired, and of any make or pattern that may be preferred.

5/- Post Free.

5/- Post Free.

BEST QUALITY FRETWOOD

Planed and Sandpapered by our Special Machinery.

WARRANTED DRY, SOUND, AND CLEAN.

Last Special Offer THIS SEASON.

For 5/- Post Free, we will send

1	3-ply Panel Bird's-eye Maple, 18in. by 18in., value 1/6
2	square feet Black Walnut
2	" fine figured Lacewood
2	" Satinwood
2	" Flowered Oak
2	" Mahogany

all 3/16 in. thick.

Customers can choose from the following kinds:—CHESTNUT, Koko, Canary, Red Birch, Cinnamon, Cedar, Teak, and many others.

SEND AT ONCE. PARCELS SENT PER RETURN.

STAR SAWs, 1/6 PER 6 DOZ. SWISS SAWs, 10D. PER 6 DOZ.

WOOD AND TOOL LISTS, 1d. STAMP.

**HINDLEY & JONES, Fretwork & Tool Stores,
NORFOLK MARKET HALL, SHEFFIELD.**

7s. 6d. A WEEK SALARY

and upward offered to both sexes (for spare moments) everywhere. The work may be done evenings.—Apply, enclosing addressed envelope, to M. TRUSCOTT AND CO., Glendower, 106, Tor Vale, Torquay.

PHOTOGRAPHY.

NOTES OF THE WEEK.

JN connection with the *Hobbies* Supply Department we shall be pleased to give advice upon all subjects referring to photographic apparatus and materials. The Department will give information upon any article or apparatus that readers of *Hobbies* may require, and will procure for them at the lowest advertised prices anything that they may need in connection with Photography. *Hobbies* Coupons will be accepted under the conditions explained on the Weekly Presentation Supplement, and every care will be taken in the selection and packing of apparatus, chemicals, plates, paper, &c.

It may be within the knowledge of some of the readers of *Hobbies* that *Light*, a journal devoted to the study of Psychology, has offered a prize of £100 for a *real* spirit Photograph. With what result we shall hope to learn later on. A contemporary, commenting upon the matter, somewhat sceptically gives the following notes on Ghost Photographs:—The usual way of making these is to attire the ghost in the conventional sheet, and having posed it, together with those to whom it appears, to cap the lens when about one-fourth the exposure has been given, this capping of the lens being the signal for the ghost to go. The lens is once more uncovered and the exposure finished. This method is, says the writer, perhaps the best from the scenic point of view, as the terrified beholder knows precisely where to look, and something like unity of effect is easy to realise, but the ghost will be as sharp as the rest of the picture, and this is somewhat against the established convention as to the cloudiness of outline which should characterise a ghost. If a piece of thin plate glass is set in front of the lens so as to make an angle of 45 degrees, with the axis on the horizontal plane, the scene can be photographed through glass, and the ghost being placed so that his image is reflected from the glass into the camera, it becomes quite possible to include the ghost without the sitter being aware of his presence; but in this case the ghost should be set against a black background, and so feebly illuminated that one exposure only is required.

X rays and the "New Photography" still monopolise the columns of the Photographic press. Those who are considering whether they shall take it up will do well to remember that three things are necessary:—A source of power, an intensity or induction coil, and a Crooke's tube. In some cases the first requirement may be met by using current from the Electric mains in the street, but this course can only be recommended to experienced Electricians, as it is necessary to reduce the strength of the current before proceeding to pass the same through the induction coil. The best power producer and the safest is probably a battery of Grove's cells, of say ten or a dozen—a small hand dynamo, or a powerful Wimshurst electrical machine.



CHAP. IV.—FRENCH COLOURS.

IN the two following chapters it is intended to deal with flower and face painting upon backgrounds, a subject hardly to be treated at any length within the limits of the one paper. The student, however, who has followed the directions given in the preceding chapters with interest will, no doubt, be able to gain some additional information from the following hints. To this end La Croix French colours have been chosen for the work, as, differing somewhat in the mediums used and their mixture from the water colours referred to in the two preceding papers, the amateur may require some information thereon. La Croix colours, used

perhaps more largely than the Worcester paints, are sold both in powder and ground in oil. An important fact, to be well borne in mind in using them when in the latter state, is that having been already mixed with oil, none, or at all events very little, need be employed in the final mixing. Blues, Whites, and Carmines, however, are always better for the addition of more fat oil.

The following is a list of La Croix oil colours, which will be found useful for simple flower painting. Afterwards, the names of a few paints suitable for backgrounds, and only to be used alone, will be given.

LIST OF 17 LA CROIX OIL COLOURS.

Grass Green (Vert No. 5, pré)	8d.
Jonquil Yellow (Jaune Jonquille)	6d.
Deep Red Brown (Brun Rouge Riche)	8d.
Chinese White (Blanc Chinois)	6d.
Capucine Red (Rouge Capucin)	8d.
Brown Green, No. 6 (Vert No. 6, Brun)	8d.
Mixing Yellow (Jaune à Mêler)	6d.
Orange Yellow (Jaune Orangé)	6d.
Deep Blue (Bleu Riche)	6d.
Azure Sky Blue (Bleu Oeil Azur)	8d.
Deep Purple (Pourpre Riche)	1/6
Flesh Red, No. 2 (Rouge Chair, No. 2)	8d.
Deep Carmine, No. 3 (Carmine No. 3, Foucè)	10d.
Deep Violet of Gold (Violet d'or Foucè)	1/3

Violet of Iron (Violet de Fer)	8d.
Neutral Grey (Gris Noir)	8d.
Sepia (Sépia)	8d.
Platina Grey (Gris de Platine)	6/-
Apple Green (Vert Pomme)	6d.

The prices and English names have been attached for the better guidance of the artist.

COLOURS FOR GROUNDS TO BE USED ALONE.

Coral Red (Rouge Corail)	6d.
Lavender Blue (Bleu Lavande)	8d.
Pompadour Pink (Rose Pompadour)	1/-
Light Coffee (Café au Lait)	6d.
Mauve (Mauve)	1/-
Chinese Yellow (Jaune Chinois)	6d.
Salmon (Saumon)	8d.
Carmelite (Carmélite)	6d.
Golden Brown (Brun Mordoré)	8d.
Chromium Water Green (Vert d'eau au Chrôme)	6d.
Chamois (Chamois)	6d.
Turquoise Blue (Turquoise Bleu)	10d.
Turquoise Green (Turquoise Vert)	10d.
Indian Blue (Bleu Indien)	10d.

Pompadour Pink may be used in light washes with other colours. Blues of any delicacy must be carefully kept from contact with colours having iron bases, and from mixing with Yellows and Purples. A palette knife of ivory or bone should be used for all Blues, and they should be ground with a glass muller upon a glass slab. These colours may be self-modelled or with Greys, but it must be remembered that Light Sky Blue is apt to chip off if laid too thickly. Platina Grey is an expensive colour, but is excellent for shading Blues from the absence of iron in its composition. The most important of the colours, however, in the above list is Carmine. This pigment is generally used in the potteries as test colours, that is, for determining the temperature of the oven. It invariably turns a disagreeable yellow if fired at too low a heat, the opposite extreme bringing it to a purplish hue. The happy medium is that which produces its exact beautiful shade, and has given its name to a certain temperature, "rose colour" heat being an excellent one for a first delicate firing. Carmine mixed with Purple makes a fine Grey shade for leaves.

The student who is desirous to put a background to his subject should now, having a little knowledge of the French colours and their mediums, proceed to work. Let him first, however, examine his China, as in the previous case, to see if perfectly dry and clean. If this should be neglected, and the ware to be decorated be at all soiled or wet, the paint will not lay, or if it does, will have a scratchy and altogether inartistic appearance after firing. When the subject, afterwards to be painted, has been finally sketched in with a fine pointed brush fully charged with Sepia or Indian Ink, the background may be laid. This should be done over the design, as, if strongly marked, the outline will shew freely through the paint, when any superfluous colour may be wiped off with an old piece of silk dipped in turpentine. A pretty Stone colour for background may be made with Light Grey and Green, but any of the background colours mentioned in the list may, of course, be used. It should be understood, however, that white or light coloured flowers need a dark background, whilst for a subject containing richer shades a light ground is more suitable. No more paint than is absolutely necessary should be put out on the palette, as colours standing exposed to the action of the air for any length of time are not of much use. For a plaque or plate of ordinary size colour, sufficient to cover a halfpenny will be required. To this add two or three drops of turpentine and five of oil of lavender. The latter is preferable to fat oil for mixing colours intended for grounding, as it enables the paint to remain moist long enough for a long wash. For backgrounds the material used is thinner than for ordinary purposes, and requires to be laid quickly and smoothly. Rapidity, however, should not be sacrificed to evenness in laying the paint, as uniformity of tint can be gained easily by the use of the dabber when the paint is almost dry. Should the colour come off too thickly upon the dabber, it is a clear proof that insufficient oil has been used in the mixing.

It must be borne in mind by the student that in portraying landscape or flowers, or, indeed, any subject upon China, the foreground objects are always to be the last painted. In no case must the nearer objects be painted first, as it would thus render the whole picture patchy and heavy.

And now a word as to the brushes, &c., used in China Painting. Whilst it is not at all necessary that fresh brushes should be used for each colour, it is absolutely impossible for good work to be done if the articles used are not spotlessly clean. Let the brushes and knives, therefore, that have been employed in one colour be well washed in water before dipping in another. Before putting away for the day they should again be washed, this time, if they have been worked in water colours, using plenty of hot water and soap. Should oil colour, however, have been used, let them be thoroughly cleansed in fresh turpentine, and afterwards dipped in rectified spirits of tar, a small bottle of which, costing 1/-, should always be at hand. If finally rubbed with a soupçon of fat oil, or dipped in alcohol—this last is considered by far the best—any brush used in ceramic colours will remain soft. It must not be forgotten, however, to wash it before re-using.

(To be continued.)

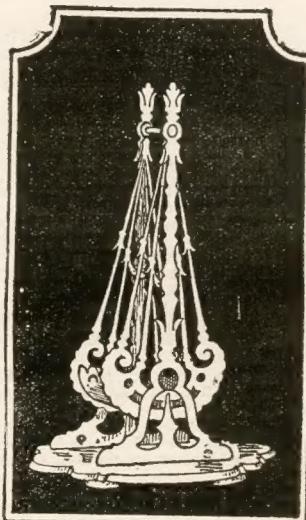
'Hobbies' Designs.



WING to the very heavy expense involved in the production of the Designs forming our Weekly Presentation Supplements, we cannot supply these with back numbers of *Hobbies*.

Copies of them may, however, be obtained on sending threepence for each Design required to the Publisher of *Hobbies*, Bouvierie House, Salisbury Square, London, E.C.

For the convenience of our readers we give below a complete list of the Designs already published.



No. 12. "SWING-BOAT" MATCH HOLDER.

1. Midget Photo Frame, with Overlay Ornament.
2. "Aphrodite" Mirror Bracket.
3. Bent Iron Work Gong Stand.
4. Hanging Twine Box, with Overlay Ornament.
5. "Card" Inkstand.
6. Carved Adams Frame.
7. "Gasalier" Bracket.
8. Bent Iron Work Table Stand, for Cards, etc.
9. Carved Lamp Bracket.
10. Model of a Victoria.
11. "Toilet Glass" Cabinet Photo Frame.
12. "Swing-Boat" Match Holder.
13. Hanging Fretwork Calendar.
14. Bent Iron Work Grill Panel.
15. Carved Blotting Book Cover.
16. Prize Card Receiver.
17. Panel with Overlaid Ornaments.
18. Bookshelves.
19. Two Stencil Dado Bands.
20. Gong Stand.
21. Two C. D. V. Photo Frames.
22. Pipe Rack, with Mirror Back.
23. Model of a Polo Cart.
24. Swing Letter Holder.

The following Design is in preparation—

25. Bent Iron Work Wall Mirror.



All communications to be answered in these columns should be marked "Correspondence," and must be addressed to the Editor of *Hobbies*, Bouverie House, Salisbury Square, London, E.C. In no case can we reply to enquiries by post.

BEES.

P.A.B.—To get bees from a skep to a moveable comb hive you must follow closely the instructions given in No. 20 of *Hobbies*. Having got the bees with their queen into the skep, they must then be treated as a swarm and introduced into the moveable comb hive, either by shaking them among the frames or by allowing them to run in at the entrance. In the latter case the frames must first be properly arranged and covered with the quilts. The right time to drive bees from skeps is either in the autumn when breeding has ceased, or 21 days after a swarm has issued.

ELECTRICITY.

ROY GILL.—Recharging dry cells is difficult to undertake, and rather dirty too. Perhaps the article shortly to appear will assist you.

A.S.T.—We have placed the subjects you mention on our list of Electrical Hobbies, and doubtless you will see them described in due course.

A. DEST.—You should be able to obtain the battery elements from any electrical stores; perhaps the Manager of the *Hobbies* Supply Department can help you.

J. R.C.—The book you require is *Induction Coils*, by Bonney, price 3/- (Whittaker). A simple list of the parts for making a coil would be of no use to you. An article is in hand on Shocking Coils.

A.F. (Sheffield).—The best and cheapest thing to do is to purchase the lamps ready made. The plant for making them would run into thousands of pounds. Our Electrician is now engaged on an article dealing with the fitting of such a light as you require.

J.B.—a. Your 10 volt lamp may be of $2\frac{1}{2}$ c.p., but we cannot be certain. The incandescent lamps are usually marked with the voltage and c.p., thus $10\frac{1}{2}$. b. 6 pint bi-chromate cells should be used to light a 10 volt lamp. c. For general purpose you may consider 2 half-pint cells equal to 1 pint if joined in parallel. d. The carbons and zines may be of the same size. e. Use No. 18 D.C.C. wire for connection.

FRETTWORK, CARVING, &c.

J. DANIELS.—It is not practicable to enlarge Design 21A to the size of a real Fire Screen.

V. BEER.—You should trim the notches of the Card Receiver in order to make the sides slant.

X.Y.Z.—You will find a list of all our Presentation Designs in another column; we cannot supply you with an advance list.

RAILWAYMAN.—You can obtain Indian Ink (or Chinese Ink) at almost any large stationer's; a stick of it costs from 4d. or 6d. upwards.

R. TAYLOR.—Yes, we shall have another Design for an Inkstand out before long, but the Bookcase you ask for is rather a large order.

WALTER.—You will get full information as to hanging the Bookshelves (Design No. 18) in the answer to "Brownie" in last week's issue.

W. AYRES.—We are obliged for your suggestion as to the "Smoker's Companion," but you will find that our Design No. 22 is very similar to it.

E.K.W.—We can get you any Fretwork goods through our Supply Department. You will require a little practice before you can make this a paying hobby.

W. D. SHRIGLEY.—If you read our Fretwork article in No. 13 you will get some suggestions as to enlarging patterns. We must meanwhile hold your second query over.

H. COLE.—You will find an answer to your query regarding the Victoria in the last number of *Hobbies*. As to whether the Model should be fixed with glue or nails, we would recommend both.

METAL WORK.

ISAAC MOORE.—For a small copper boiler a thickness of one-sixteenths inch would stand a pressure of 20 lbs. It could be obtained from any metal merchant.

C.H.S.—First clean your gas bracket, and then lacquer it with Brass lacquer after heating the metal. Do not use enamel, but you might try the Bent Iron Work black paint for some articles.

PIGEONS.

W.C.T.—Yes, the size of pigeon house is ample size for three pairs show Horners. We presume the house is divided for the young stock when ready for removal; this is important.

PHOTOGRAPHY AND LANTERNS.

J. SINIS.—Write to Theobalds, Farringdon Road, E.C.; they sell the thin pictures for magic lantern slides.

F.W.—We cannot tell you how to print photographs in this column. You had better buy a book on *Elementary Photography*, 1/-, post free. The *Hobbies* Supply Department will forward on receipt of stamps.

F. DAY.—The prints from an ordinary negative placed side by side will not give stereoscopic effect. Negatives must be taken with twin lenses, or the lens can be moved on the baseboard of the camera so as to take a second view on the plate. We shall give an article in due course upon the stereoscope and stereoscopic effect.

MISCELLANEOUS.

E. BENSTEAD.—Our Cycling articles will contain some hints as to the management of pneumatic tyres.

BATLEY.—We cannot suggest any satisfactory means of removing the printing from post cards, &c. Can any reader tell us?

H. E. W. W.—By special pumping machinery attached to the locomotive. The system is only adopted on the L. & N.W. Railway.

H. MARSHALL.—Your request has been anticipated, and *Hobbies* No. 27, which begins the second volume, will be provided with a cover.

T. CRANE AND A. JENKINS.—We certainly intend to take up Picture Frame Making, but the demand on our space is so great that we cannot promise when it may be.

TAFFY.—We cannot find any instruction book on the Welsh language, but as we have numerous Welsh readers we trust that some of them may give us the necessary information.

R. E. FLETCHER.—The only book which we could at present recommend is *Practical Taxidermy*, by Montagu Browne (Upcott Gill), price 7/6. We are sorry we have no room yet for Taxidermy Articles.



* The charges for advertisements (prepaid) in this page will be sixpence for every twelve words or less, name and address inclusive, and one halfpenny for every additional word. Single letters, initials, and figures are each counted as a word; but undivided numbers (as 158), and prices (as 10s. 6d.) count as only one word each. In every case the name and address of the advertiser must be given for publication, and we cannot at present undertake to supply a private name or number and receive replies to advertisements at our office. All advertisements must be accompanied by remittances, otherwise they cannot be inserted. When ever possible, payment should be made in Postal Orders, and not stamps. Letters should be marked "Advt." and must be addressed to the Publisher, *Hobbies*, Bouvierie House, Salisbury Square, London, E.C.

NOTE.—Trade Advertisements can only be inserted in this page at the rate of one shilling per line.

Acme Electric Bell Set, comprising 22 in. Electric Bell, Quartz Leclanche Battery, Push, 50 feet Wire, Staples, Instructions, 4/-; better value impossible.—Electric, Lord Street, Openshaw, Manchester. H. 5.

Bagatelle Board.—Cloth unsciled, 9 ft. by 24, 3 billiard cues, 8 ivory balls, complete, 30/-.—F. Bryant, 15, Bishop's Road, Highgate.

Boys' Own Paper.—5 volumes, monthly parts, no plates. Exchange good Fretsaw Machine or offers.—T. Turnbull, Foundry Fields, Crook, Durham.

Edison Phonograph for Sale or Exchange, hand driven, 8 records, 7 listening tubes, &c. What offers?—James, 73, Acklam Road, London, W.

Electrical Hobbies.—How to fit up an Electric Bell Set, make a Motor, and make a Shocking Coll. Separate illustrated instructions, free with list, 2d.—Electric, Lord Street, Openshaw, Manchester. F. 6.

Electric Lamps, 2-volt, 6d., three for 1/3; Lamp-holders, 4d.; Reflectors, 3d.; 4-volt Pocket Accumulators, Improved system, 5/6.—Whiting, 109, Fore Street, E.C.

For Sale, Roger Fret Machine (new January), 13/-, or offers.—Williamson, Lincoln Street, Wakefield.

Free.—Pocket Rubber Stamp of your Name and Address; also particulars of the best paying Agency going for whole or spare time.—Richford's Company, Snow Hill, London. D. 2.

Hand Camera for Sale, 10/6, almost new, 1-plate.—Apply, F. Bates, 31, St. Leonard's Avenue, Bedford.

How to make an Electric Night Light that will work well for years without attention, post free, 6 stamps; also how to attach an electric alarm to a clock, 6 stamps.—James, 11, Stanbury Road, Peckham, S.E. C. 3.

How to learn and start a light artistic business that will produce a living without previous knowledge on the small capital of one pound. Complete instructions, post free, 12 stamps.—James, 11, Stanbury Road, Peckham, S.E. C. 3.

Join the Rapid Stamp Exchange.—For Rules, apply Cooke, Hick Street, Birmingham. B. 2.

Lantern Slides, made from your own negatives, 12/- dozen. Write for list, free. Every slide individually tested.—E. H. Veitch, 58, North Road, Durham.

Lester Treadle Fret Machine for sale, with Lath and Emery Wheel; will take £1.—Read, Bond St., Hull.

New Book of Instructions in gilding, graining, mixing paint, French polishing, picture-frame making, mount cutting, etc., 1,000 valuable recipes, free, 1/2. Decorators' Assistant, 600 recipes, free, 10/-—McQuhae, Cockermouth, and all Booksellers. Z.M. 1.

Old English Stamps Wanted, any values; also current issue above 1d.—Gatt, 17, Bailey Road, Portsmouth.

Postage Stamps.—Edward W. Drury, Westholme, Hessle, E. Yorks., is a buyer of rare stamps; high prices paid. G. 1.

Roger Fret Saw wanted, perfect condition, state price carriage paid.—Thos. Wm. Wren, Castleisland, Co. Kerry, Ireland.

Stamps.—Collector wishing to dispose of duplicates will send 100 different, including many rare, post free, 6d.—Jordan 56, Leytonstone Road, Stratford.

Solid-tyred Bicycles from 12/6; Cushions from 25/-; Pneumatics from £3 10s.—Lund, Cycle Agent, Bradford. See our Fretwork Advt. in No. 2c. B. 2.

Wanted, every reader of *Hobbies* to send 1/- for one of our Pocket Knives (2 blades), free with our lists; do not delay.—Electric, Lord St., Openshaw, Manchester. D. 4.

* * As we are obliged to go to press about ten days before the nominal date of publication, Advertisements must be received at our Office on Wednesday morning to ensure insertion in the following week's issue.

CYLINDERS FOR COMPRESSED GASES.—

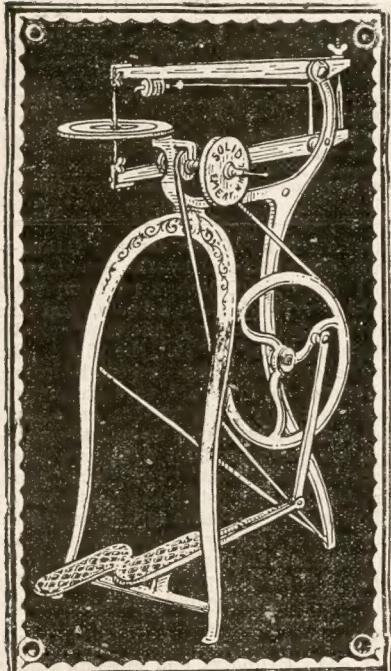
The committee appointed by the Secretary of State to report upon Cylinders for Compressed Gases have completed their labours, and the report has been published. It affects principally the makers of cylinders and the firms who manufacture and compress oxygen, hydrogen, and coal gases. With regard to such matters we are not much concerned, but there are a few of the instructions which it may be well to give:—Testing to be repeated at least every two years, and annealing at least every four years. Cylinders which fail in testing to be destroyed or rendered useless. Cylinders not to be refilled until they are quite empty. If the cylinders are sent out unpacked, the valve fittings should be protected by a steel cap. No oil or similar lubricant to be used for cylinder valves, pressure gauges, regulators, or other fittings. Pressure gauges to have a check to prevent a sudden inrush of gas. Cylinders and pressure gauges for hydrogen and coal gas to be painted red and have left-handed screws. Subject to a reasonable guarantee being obtained that the conditions stated in the report are complied with, the committee will be prepared to recommend that cylinders should be distributed by road or rail unpacked. The committee think that the railway companies might, without risk, withdraw the regulation as to packing cylinders in the case of firms holding a certificate of inspection. This latter clause will be hailed with great satisfaction by all users of compressed gases. The present restrictions are very irksome and inconvenient.

ONLY A FEW MORE DAYS.

Special Offer to Clear Stock!

As the close of the season is at hand we wish as far as possible to clear our Stock of Treadle Fretwork Machines, and we therefore make a Special offer which will hold good only until the end of March. With every Improved Roger Fretsaw we will give away a SIX-FOOT PARCEL OF ASSORTED PLANED FRETWOOD, and with every Companion, Goodell, and Imperial Machine we will give a TWELVE-FOOT PARCEL OF ASSORTED PLANED FRETWOOD. All these Machines are made in our own Workshops, and may be thoroughly depended upon to do good work. The wood will not be sent with Machines ordered after the end of March.

THE IMPROVED "ROGER" FRETSAW



The Improved "Roger" Fretsaw.

With Drill, Blower, Fly Wheel,
Emery Wheel, etc.

These Machines are made entirely in our own workshops, and we strongly recommend them as being thoroughly serviceable and reliable. Although offered at an exceptionally low price, they are of the very best quality and finish. The arms have a clear swing of 18 inches, thus enabling a large piece of work to be cut, and the clamps are hung on pivots and will hold any size of saw. The Tilting Table may readily be adjusted to any angle for Inlaying. The Machines are made by experienced workmen, and all material used is of the best quality. Each one is provided with Drill Spindle, Dust Blower, Fly Wheel, and all accessories.

No. 1.—Price, complete 16/-
(Or 15/3 with Three Hobbies' Coupons.)

No. 2.—Price, with Nickel-plated Tilting Table
and Solid Emery Wheel in addition
to Fly Wheel 19/-

(Or 18/1 with Four Hobbies' Coupons.)

PACKING CASES FREE.

Other Machines made by us are—

The IMPERIAL FRETSAW, with upright Drilling Attachment ... £2 15 0

The COMPANION LATHE and FRETSAW, with Tools complete ... £1 18 0

The GOODELL LATHE and FRETSAW, with Tools complete ... £2 14 0

J. H. SKINNER & Co., (H Dept.,) DEREHAM, Norfolk.